

**GEOL 10100: INTRODUCTION TO GEOLOGY LABORATORY
HUNTER COLLEGE - Spring 2023**

Lecture/Laboratory

Section 10: Tuesday/Friday 10:00 – 11:15AM

Section 04: Tuesday/Friday: 11:30 – 12:45PM

Room: Hunter North 1021

Instructor: John Zayac

Email: john.zayac@hunter.cuny.edu

Office: Hunter North 1032, Department of Geography and Environmental Science

Office Hours: T/F 2:30 – 4:00PM, *or by appointment*

Note: I am at Hunter College on T/F this semester. Zoom meetings can also be scheduled.

OFFICIAL COURSE COMMUNICATION

All course communication will take place through Blackboard, so be sure to check your official Hunter email address often.

COURSE DESCRIPTION

GEOL 101, Introductory Geology Lab, is a hands-on laboratory science course. GEOL 101 assists you, in learning and expanding your understanding of the scale of the Earth and the forces that shape it with hands-on laboratory and field experiences. This course will serve as an introduction to the earth sciences and will prepare you for further coursework in the Environmental Studies program. It will also give you a working knowledge and vocabulary to take other physical geography and geology courses. Moreover, it will introduce you to some of the cutting-edge technologies used in the earth sciences, potentially drawing some of you into an earth science related career path. In general, there will be a 1:2 ratio between lecture and lab work over the course of each week.

INFORMED REGISTRATION STATEMENT

This is a 3.0 credit, science-based course, which meets the Common Core Requirement for **Category C, Life and Physical Sciences**.

COURSE STRUCTURE

This course will be taught in-person on the Hunter College campus*. The Hunter College Blackboard site will have a “Coursework” page. For each lab topic there will be folder containing recommended reading, additional learning materials, and a link to submit the lab exercise. Students are expected to check the site regularly and keep up with the material.

**This semester the first three class meetings will be held virtually and asynchronously. Course material will be posted on Blackboard for you to complete.*

COURSE GOALS AND LEARNING OUTCOMES

The overall goal of this course is to help you, as students, learn to articulate and evaluate the evidence that forms the foundation of scientific inquiry and knowledge formation.

The objectives and goals of this course:

- An understanding of the nature of science and the scientific method.

- The importance of thinking critically about scientific data.
- A basic understanding of the rocks and minerals that make up the earth and the ability to identify the most important types of rocks and minerals and how they are formed (the rock cycle).
- A basic understanding of plate tectonics.
- An understanding of deep time, the Principle of Uniformitarianism and how geologists assess the ages of geologic features.
- An understanding of the formation and distribution of natural resources and the costs and benefits of their extraction.

Specific Learning Outcomes:

By the end of the semester, students will be expected to:

1. Describe the key components of the scientific method.
2. Describe and identify rocks and minerals based on detailed observations.
3. Relate geologic processes and the distribution of rocks, minerals and geologic resources to the Theory of Plate Tectonics.
4. Interpret geologic cross sections with respect to geologic time and the rate of geologic processes.

COURSE TOPICS

There will be nine topics we will cover in this course. Each topic will typically build off each other, so be sure to keep up with your classwork.

1. Introduction and Building Your Geology Toolbox
2. Plate Tectonics
3. Minerals
4. Igneous Rocks
5. Sedimentary Rocks
6. Metamorphic Rocks
7. Geologic Time
8. Structural Geology
9. The Geology of New York

CLASS MATERIALS:

Required textbook:

- Laboratory Manual in Physical Geology, By AGI American Geological Institute, NAGT - National Association of Geoscience Teachers, Vincent Cronin, Dennis G. Tasa, Pearson, 12/e, 2021 ISBN-13: 9780135836972 – *buy the eText version*. This will save you money and allow you to access the material without having to lug around a physical manual.
- Please bring your laptop or tablet to class with you each meeting to access the textbook and other course materials. *Please let me know if you do not have access.*
- Please make sure that you bring to each class the following items: a pen, pencil(s) with eraser, and a calculator (*you may use your computer or phone*). All other lab materials will be supplied by your instructor.

GRADING

Course grades will be calculated based on the following proportions:

- 45% Class Activities*
- 10% Geology of New York Field Report*
- 15% Exam 1*
- 15% Exam 2*
- 15% Exam 3*

Letter grades at the end of the term will be assigned according to the Hunter College grading policy which can be found at this link: <https://hunter-undergraduate.catalog.cuny.edu/policies-and-requirements/academic-requirements/grading-policies/grading-definition>

CLASS ACTIVITIES

The structure of this course gives us a unique opportunity to learn geology through a combination of brief lectures, discussions, and hands-on activities. All assigned work will have a due date associated with it.

- You will complete the lab exercises that are in the lab manual or provided by me and submit them via Blackboard (as a word document). A link will be available for you to submit your work.
- Grading of your laboratory exercises will be based on the quality and accuracy of the observations, explanations, answers to questions and conclusions. The grading of your laboratory exercises will be as follows:
- **5 = excellent, 4 = good, 3 = fair, 2 = poor, 1 = substandard, 0 = not handed in.**
- You may work with other students at your table, but each of you must turn in your own work.
- Answer all questions in full, complete sentences. **DO NOT RECOPY THE QUESTION.** Rather, answer the question so that the question is implicit in the answer. For instance, if the question is “What color is the rock on table A?” your answer might be “The color of the rock on table A is gray.” An unacceptable answer would be “gray.” Use proper grammar and spelling. If you aren’t sure of the spelling use a dictionary. A very convenient online dictionary can be found at www.m-w.com.
- A late work penalty of 20% will be applied to work handed in within two weeks of the due date. Any work handed in after that will receive a zero. There will be no work accepted after the last day of class.

EXAMINATIONS

There will be three non-cumulative in-person exams. These will be practical in nature, testing your understanding and development of skills used by geologists. Each exam will cover the material presented since the last exam. No electronics will be allowed for the exams, so make sure you bring a pencil(s) with an eraser.

Exam 1: Earth Science, Plate Tectonics, and Minerals

Exam 2: Rocks and the Rock Cycle

Exam 3: Geologic Time, Hazards, and the Geology of NYC

CR/NCR POLICY

The CR/NCR option will be honored only if the conditions stated on the CR/NCR form are satisfied: all course work has been completed and you earned grades such that you accumulated at least 50 points total in the course. CR/NCR must be filled correctly and submitted BEFORE the final examination begins. Students on probation are ineligible. For more information about

Hunter College's policy on CR/NCR go to: <http://www.hunter.cuny.edu/advising/howto/credit-no-credit-cr-nc>.

GENDER IDENTITY AND PREFERRED PRONOUNS

All people have the right to be addressed and referred to in accordance with their personal identity. In this class, we will have the chance to indicate the name that we prefer to be called and, if we choose, to identify pronouns with which we would like to be addressed. I will do my best to address and refer to all students accordingly and support classmates in doing so as well. If there is a name or pronoun(s) you prefer to be addressed by, please approach me in class, send me an email, or mention it to me privately during office hours and I will add this information to my course roster.

COVID (and other illness) POLICY

As we are beginning our third academic year of the pandemic it still imperative that we implement all the ways we can make our time together **safe** and **inclusive** for all. If you are experiencing symptoms of any communicable disease, or have tested positive after encountering an ill person, please do not attend class and email me to make arrangements to keep you caught up in class.

HUNTER COLLEGE POLICY ON ACADEMIC INTEGRITY

Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures.

SYLLABUS CHANGE POLICY

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice. Updates will be announced in lecture and posted regularly on Blackboard.

ADA POLICY

In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical, and/or Learning) consult the Office of AccessABILITY, located in Room E1214B, to secure necessary academic accommodations. For further information and assistance, please call: (212) 772- 4857 or (212) 650-3230.

HUNTER COLLEGE POLICY ON SEXUAL MISCONDUCT

In compliance with the CUNY Policy on Sexual Misconduct, Hunter College affirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-biased harassment retaliation against student, employees, or visitors, as well as certain intimate relationship. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the

Bill of Rights for Hunter College.

- A. **Sexual violence:** students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, or contacting the College’s Public Safety Office (212-772-4444)
- B. **All other forms of sexual misconduct:** Students are strongly encouraged to contact the College’s Title IX Campus Coordinator, Dean Jean Rose (jtrose@hunter.cuny.edu or 212-650-3262) or Colleen Barry (colleen.barry@hunter.cuny.edu or 212-772-4534) and seek complementary services through the Counseling and Wellness services Office, Hunter East 1123.

CUNY Policy on Sexual Misconduct Link:

<http://www.cuny.edu/about/administration/offices/la/policy-on-sexual-misconduct-12-1-14-with-link.pdf>

TENTATIVE CLASS SCHEDULE*

Special Note: *The first three lab/lecture meetings will take place as asynchronous, remote lessons. Class activities will take place through Blackboard at a time that is convenient for you. These activities will be due by the start of class on Tuesday, February 7.*

Week	Date	Tuesday	Friday
1	24-Jan		Introduction to Geology
2	31-Jan	Getting to Know Earth	Quantitative Review
3	07-Feb	Plate Tectonics	Plate Tectonics
4	14-Feb	Plate Tectonics	Minerals
5	21-Feb	Minerals	Minerals
6	28-Feb	Minerals	EXAM 1
7	07-Mar	The Rock Cycle	Igneous Rocks
8	14-Mar	Igneous Rocks	Igneous Rocks
9	21-Mar	Sedimentary Rocks	Sedimentary Rocks
10	28-Mar	Metamorphic Rocks	Metamorphic Rocks
11	04-Apr	EXAM 2	SPRING BREAK
12	11-Apr	SPRING BREAK	Geologic Time
13	18-Apr	Relative Dating	Numerical Dating
14	25-Apr	Structural Geology	Structural Geology
15	02-May	Geology of New York	Central Park Field Trip
16	09-May	Putting It All Together	
17	16-May	EXAM 3	

**Subject to change as needed. All updates will be posted on Blackboard.*